



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/219,195 12/21/98 LEE

F SA997115

EXAMINER

WM01/0214

MONICA D LEE
IBM CORPORATION
INTELLECTUAL PROPERTY LAW
5600 COTTLE ROAD L2PA 0142
SAN JOSE CA 95193

ALTMAN, F

ART UNIT

PAPER NUMBER

2652

DATE MAILED:

02/14/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/219,195

Applicant(s)

LEE ET AL.

Examiner

Franklin D. Altman

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) g.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Continued Prosecution Application

The request filed on 2/5/2001 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09219195 is acceptable and a CPA has been established. An action on the CPA follows.

Prior Election

1. An election made in the prior application carries over to the CPA only if all of the following conditions are met: (1) the CPA is designated as a continuation or is not designated at all (i.e. the CPA is NOT designated as a divisional); (2) there was an express election by the applicant in reply to a restriction requirement in the prior application; (3) the CPA presents claim(s) drawn only to invention(s) claimed in the prior application; and (4) the CPA does not contain an indication that a shift in election is desired.
2. In response to the restriction requirement:
3. Applicant expressly elected Group II in the prior application, paper 6, received on 10/16/2000.
4. Accordingly, prosecution is being continued on the invention elected and prosecuted by Applicant in the prior application.

Claim Objections

Claims 30 and 37 continue to be objected to because of the following informalities: Line 2 of claim 30 and line 2 of claim 37 have a misspelling "orthognally" which should pronounce the 3rd "o" to be corrected to - -orthogonally- -. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 21 and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Yan (U.S. Patent 6,025,988).

As per claim 21:

Yan discloses an assembly (10) comprising:

A first device (18);

A second device (36) having electrically conductive paths (14); and

An interconnect device (46) coupled between said first (18) and second (36) devices to route one or more signals between said first device (18) and said electrically conductive paths (14).

As per claim 40:

Yan additionally discloses wherein said electrically conducting paths (14) are attached to said second device (36).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2652

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 14-20, 22-39, and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons et al (U.S. Patent 5,862,010) in view of Yan.

As per claim 14:

Simmons et al discloses a suspension assembly (80) comprising:

A slider/head assembly (30);

A suspension (32) having electrically conductive paths (conductive lines of 120); and

Coupling between said suspension (32) and said slider/head assembly (30) to route one or more data signals between said electrically conductive paths (120) and said slider/head assembly (30).

But lacks an explicit teaching of:

An interconnect module for coupling.

However, Yan discloses:

An interconnect module (46) for coupling.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to enable "The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.", column 5, lines 54-58 of Yan.

As per claims 15, 19, 25, 28, 32 and 35:

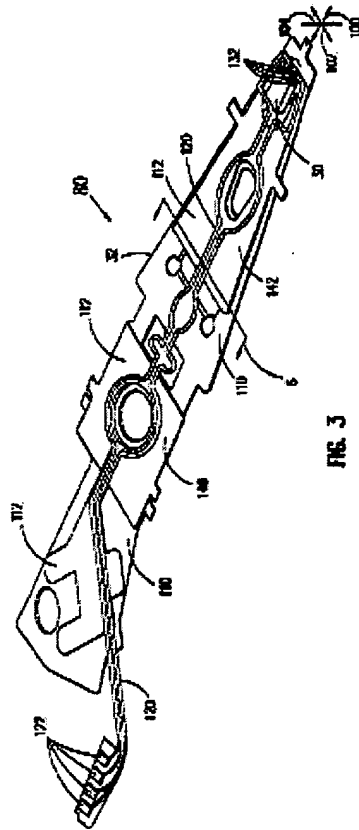
Simmons et al's suspension (32) is an integrated lead suspension (32).

As per claim 16, 29, 33 and 36:

Art Unit: 2652

Simmons et al's suspension (32) is configured for in-line mounting of said slider/head assembly (30). See Simmons et al's Figure 3 shown below.

SIMMONS ET AL'S FIGURE 3



Art Unit: 2652

As per claim 17, 30 and 37:

Simmons et al's slider/head assembly (30) is orthogonally mounted onto said suspension (32).

See Simmons et al's Figure 3 shown on the previous page.

As per claim 18:

Simmons et al discloses a suspension assembly (80) comprising:

A slider/head assembly (30);

A suspension (32) having electrically conductive paths (conductive lines of 120); and

A microactuator ("microactuator", see column 6, line 32);

Coupling between the suspension (32) and said microactuator ("microactuator", see column 6, line 32) to route one or more signals between said electrically conductive paths (120) and said microactuator ("microactuator", see column 6, line 32).

But lacks an explicit teaching of:

An interconnect module for coupling.

However, Yan discloses:

An interconnect module (46) for coupling.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to enable "The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.", column 5, lines 54-58 of Yan.

Art Unit: 2652

As per claim 20:

Simmons et al's suspension (32) includes a first set of termination leads (132) coupled to a slider/head assembly (30) and a second set of termination leads (122) for coupling, but lacks an explicit teaching of an interconnect module.

However, Yan discloses an interconnect module (46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to enable "The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.", column 5, lines 54-58 of Yan.

As per claim 22:

Simmons et al discloses the first device (30) is a slider/head assembly (30) and said second device (32) is a suspension (32); But lacks an explicit teaching of:

An interconnect module for coupling.

However, Yan discloses:

An interconnect module (46) for coupling.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to enable "The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.", column 5, lines 54-58 of Yan.

Art Unit: 2652

As per claim 23:

Simmons et al discloses the first device (“microactuator”, see column 6, line 32) is a microactuator (“microactuator”, see column 6, line 32) and said second device (32) is a suspension (32), But lacks an explicit teaching of:

An interconnect module for coupling.

However, Yan discloses:

An interconnect module (46) for coupling.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to enable “The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.”, column 5, lines 54-58 of Yan.

As per claim 24:

Simmons et al discloses a storage device (10) comprising:

A disk (12);

A spindle motor (14) positioned to support and rotate said disk (12);

A suspension assembly (80) including coupling between a slider/head assembly (30) and a suspension (32), said suspension having electrically conductive paths (120) and routing one or more data signals between said electrically conductive paths (120) and said slider/head assembly (30); and

Art Unit: 2652

An actuator (142) coupled to said suspension assembly (80) and operable to position said suspension assembly (80) above said disk (12) to access said disk (12) for reading and/or writing operations. See column 4, lines 5-9.

Simmons et al lack an explicit teaching of an interconnect module for coupling and routing.

However, Yan discloses an interconnect module (46) for coupling and routing.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to enable "The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.", column 5, lines 54-58 of Yan.

As per claim 26:

Simmons et al's suspension (32) is configured for in-line mounting of said slider/head assembly (30). See Simmons et al's Figure 3 shown on previous page 6 of this office action.

As per claim 27:

Simmons et al discloses a test platform (10) for disks (12). Inherently, Simmons system (10) is a test platform in that each time a read or write operation is attempted it would likely succeed or pass but could fail.

Simmons et al's test platform (10) comprises:

A spindle motor (16) for rotating a disk (12) during a test operation (read/write operation); and

A test platform (10) including a suspension assembly (80) coupled to an actuator (142), said actuator (142) operable to position said suspension assembly (80) above said disk (12) to access said disk (12) for said test operation (read/write operation), said suspension assembly (80)

Art Unit: 2652

including coupling between a slider/head assembly (30) and a suspension (32) having electrically conductive paths (120) and routing one or more data signals between said suspension (32) and said slider/head assembly (30).

As per claim 31:

Simmons et al discloses:

A disk (12);

A spindle motor (16) positioned to support and rotate said disk (12);

A suspension assembly (80) including a coupling between a suspension (32) having electrically conductive paths and a microactuator ("microactuator", see column 6, line 32) to route data signals between said electrically conductive paths and said microactuator ("microactuator", see column 6, line 32); and

An actuator (includes 42) coupled to said suspension assembly (80) and operable to position said suspension assembly (80) above said disk (12) to access said disk (12) for reading and/or writing operations,

But lacks an explicit teaching of

An interconnect module for coupling.

However, Yan discloses an interconnect module (46) for coupling.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been

Art Unit: 2652

motivated to enable “The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.”, column 5, lines 54-58 of Yan.

As per claim 34:

Simmons et al discloses a test platform (10) for disks (12). Inherently, Simmons disk drive is a test platform in that each time a read or write operation is attempted it would likely succeed or pass but could fail.

Simmons et al’s test platform (10) comprises:

A spindle motor (16) for rotating a disk (12) during a test operation (read/write operation); and

A test platform (10) including a suspension assembly (80) coupled to an actuator (includes 42), said actuator (includes 42) operable to position said suspension assembly (80) above said disk (12) to access said disk (12) for said test operation (read/write operation), said suspension assembly (80) including coupling between a suspension (32) and a microactuator (“microactuator”, see column 6, line 32) to route one or more data signals between said suspension (32) and said microactuator (“microactuator”, see column 6, line 32).

Simmons et al lack an explicit teaching of an interconnect module for coupling and routing.

However, Yan discloses an interconnect module for coupling and routing.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to enable “The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.”, column 5, lines 54-58 of Yan.

Art Unit: 2652

As per claims 38, 39, and 41-43, Simmons et al additionally discloses wherein said electrically conducting paths (120) are attached to said suspension (32), But lacks an explicit teaching of:

An interconnect module for coupling.

However, Yan discloses:

An interconnect module (46) for coupling.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the interconnect module (46) disclosed by Yan to channel and couple the electrical paths of Simmons et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to enable "The pad set 46 placement can vary in configuration as needed according to the load beam geometry and amplifier chip 44 layout.", column 5, lines 54-58 of Yan.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fukuda (U.S. Patent 6,181,520 B1) discloses head slider with an interconnect module.

This is a CPA of applicant's earlier Application No. 09219195. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2652

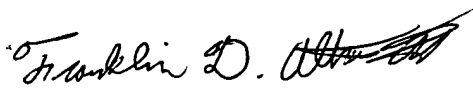
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Franklin D. Altman whose telephone number is (703) 305-7494. The examiner can normally be reached on m-th, 6:30 am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached at (703) 305-9687.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-9021 for formal communications or (703) 308-90511 for informal communications, which should be so designated.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.


Franklin D. Altman, III


HOA T. NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600